

HUMAN COMPUTER INTERACTION CAT 2

BSCCS/2023/39121

Question 1:

By default, the Android Twitter app shows users notifications about all sorts of things like if they were

mentioned in a tweet, if someone likes their tweet, if they get a new follower, ect. Some users like these

notifications but others find them annoying. Figure 1 shows the sequence of screens necessary to disable

notifications for “Mentions, replies, and photo tags”. Answer the following questions about this sequence of screenshots.

1. Describe a pro and a con of using each of the following methodologies to determine if the Twitter app

is usable in terms of this task

3mks

Pros and Cons of Usability Evaluation Methodologies

A/B Testing:

- **Pro:** Provides quantitative data on user behavior and preferences, allowing for direct comparison of different interface designs.
- **Con:** Relies on statistical significance, which may require a large number of participants and time to produce conclusive results.

Think Aloud:

- **Pro:** Provides qualitative insights into user thought processes and decision-making, helping to identify usability issues.
- **Con:** Can be influenced by the user's awareness of being observed, potentially affecting natural behavior.

Interview:

- **Pro:** Allows for in-depth exploration of user experiences and opinions, providing rich qualitative data.
- **Con:** Can be time-consuming and subjective, as it relies on user recall and interpretation.

Cognitive Walkthrough:

- **Pro:** Identifies potential usability problems early in the design process, preventing costly errors.
- **Con:** Assumes users have perfect knowledge of the system, which may not reflect real-world user behavior.

Question 2:

2. Use Heuristic Evaluation with Nielsen's 10 Heuristics to identify five positive or negative aspects of this interaction sequence 3mks

Heuristic Evaluation

Heuristic Evaluation Using Nielsen's 10 Heuristics

1. Visibility of System Status:

- Positive: Each screen clearly shows the current state and the next steps, helping users understand their progress in the task.

2. Match Between System and the Real World:

- Positive: The labels and icons used in the notifications settings are familiar to users, matching their mental models.

3. User Control and Freedom:

- Negative: If users accidentally navigate to the wrong screen, it may not be immediately clear how to go back or undo their actions.

4. Consistency and Standards:

- Positive: The design and layout of the settings screens are consistent with other parts of the Twitter app, aiding user familiarity.

5. Error Prevention:

- Negative: The steps required to disable notifications are not immediately obvious, which could lead to user errors or frustration.

Question 3:

3. Analyze this sequence of interactions using GOMS. Assume the following variable names represent

the time required to do each action. List out all the necessary actions and use them to construct the

formula that would calculate the amount of time necessary to complete the actions in Figure 1. In class

we only learned the KVM model thus far, so please treat the person's finger pressing the screen the

same way you would handle a mouse.

- p - point to an area on the screen
- b - press a button (physical or virtual)
- h - home the hand on a position on the screen
- d - draw a straight line on the screen using a finger
- k - open keyboard
- c - type one character
- m - mentally preparing for executing physical actions

4mks

GOMS Analysis

To calculate the amount of time necessary to complete the actions in Figure 1, we need to list all the actions and construct a formula using the given variables.

Assuming the following sequence of actions based on the screenshots:

1. Open the Twitter app:

- h (home the hand)
- b (press the Twitter app icon)

2. Navigate to the profile or settings menu:

- p (point to the menu icon)
- b (press the menu icon)
- p (point to the settings option)
- b (press the settings option)

3. Access the notifications settings:

- p (point to the notifications option)
- b (press the notifications option)

- p (point to the "Mentions, replies, and photo tags" option)
- b (press the "Mentions, replies, and photo tags" option)

4. Disable the notifications:

- p (point to the toggle switch for each notification type)
- b (press the toggle switch to turn off notifications)
- Repeat for each notification type if needed (let's assume three types: mentions, replies, and photo tags)

Formula for Total Time (T):

$$T = h + b + p + b + p + b + p + b + p + b + 3 * (p + b)$$

$$\text{Simplified: } T = h + b + 5p + 5b + 3 * (p + b)$$

Where:

- **h = time to home the hand**
- **b = time to press a button**
- **p = time to point to an area on the screen**